



**Department of Veterans Affairs
Office of Inspector General**

Office of Healthcare Inspections

Report No. 14-03927-197

Healthcare Inspection

Patient Telemetry Monitoring Concerns Michael E. DeBakey VA Medical Center Houston, Texas

March 31, 2015

Washington, DC 20420

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Executive Summary

The VA Office of Inspector General Office of Healthcare Inspections conducted an inspection in response to complaints about patient telemetry monitoring practices at the Michael E. DeBakey VA Medical Center (facility) in Houston, TX. The complainant alleged that:

- Untrained employees monitor inpatients on telemetry (portable device that allows continuous observation of a patient's heart rate and rhythm).
- Since January 2014, several inpatients on telemetry monitoring have died who potentially could have been saved if nursing staff were alerted rapidly to observe cardiac arrhythmias.
- The new telemetry monitoring equipment installed in February 2013 does not allow patient monitoring in a safe and effective way.

We did not substantiate the allegation that untrained employees were monitoring inpatients who were on telemetry. We found evidence of ongoing training and competency assessment for recently hired telemetry staff as well as documented training and competency for all current telemetry staff.

We did not substantiate the allegation that patients on telemetry, during the period January 1, 2014, through July 18, 2014, died who potentially could have been saved if telemetry staff had notified nursing staff of observed cardiac arrhythmias. However, of the 40 telemetry patients with facility-conducted mortality reviews, we found documentation of 18 (45 percent) patients with a "hospice" or "comfort care" status. For these patients, the lack of corrective action noticed by telemetry staff may have been interpreted as a delay in care, when in fact, the patients' wishes were not to have any interventions.

We did not substantiate the allegation that the new telemetry monitoring equipment installed in February 2013 prevents patients on telemetry from being monitored in a safe and effective way. The new system functions were comparable to the replaced system.

While not one of the complainant's allegations, during the course of our review, several interviewed staff expressed concerns that staff sleep while on duty during the night shift. Therefore, we visited all telemetry units and the centralized telemetry monitoring location on the night shift. We did not find staff sleeping; however, we did find that some unit staff were not carrying the facility-required telephones used for direct communication between telemetry and unit staff. We revisited the same areas during the day shift and found staff on two of the same units not carrying the required telephones.

Based on our review, we recommended that the Facility Director ensure that the appropriateness of assigning patients to telemetry is reviewed. We also recommended that the Facility Director ensure dedicated wireless telephones are continuously carried

by unit charge nurses or designees for effective communication between unit and telemetry monitoring technicians as required by local policy.

Comments

The Interim Veterans Integrated Service Network Director and Facility Director concurred with our recommendations and provided an acceptable action plan. (See Appendixes A and B, pages 7–9 for the Directors' comments.) We will follow up on the planned actions until they are completed.



JOHN D. DAIGH, JR., M.D.
Assistant Inspector General for
Healthcare Inspections

Purpose

The VA Office of Inspector General (OIG) Office of Healthcare Inspections conducted an inspection to assess the merit of allegations regarding patient telemetry monitoring practices at the Michael E. DeBakey VA Medical Center (facility) in Houston, TX.

Background

This tertiary care facility of 578-bed, is part of Veterans Integrated Service Network 16 and provides a broad range of inpatient and outpatient health care services.

Telemetry Monitoring. Telemetry monitoring provides a continuous electrocardiogram of the heart's electrical activity through external electrodes placed on the patient's body. The electrodes transmit segments of electrocardiogram data to a remote surveillance device typically located at a centralized station. The centralized surveillance device continuously analyzes patient's electrical heart rhythms according to preprogrammed parameters. Although it is possible for a patient to experience an abnormal heart rhythm, or arrhythmia, with little or no effect, others may have severe consequences that require immediate intervention. Telemetry staff who monitor the heart rhythms have been trained to recognize arrhythmias and alert clinical staff who are in charge of the patient's care at the bedside (unit staff). The real-time ability to monitor the heart using telemetry provides clinicians the opportunity to recognize the need for early intervention; however, effective intervention is generally dependent upon (1) telemetry staff recognition of the arrhythmia and (2) quick notification of unit staff.

Prior to October 2014, the facility utilized centralized telemetry monitoring by medical instrument technicians (MITs) to monitor patients on multiple units and floors in the facility and to notify unit staff of observed patient issues as they arise. Because the MITs were located in the centralized area, they may not have been on the same floor as the patients they were monitoring. Besides the monitoring by MITs, computer screens displaying the patient's heart rate and rhythm are available at the bedside on some units and in the nurses' stations on all units with telemetry capability. Therefore, unit staff may respond to an arrhythmia that they have observed before notification by the telemetry MITs.

The selection of patients for telemetry monitoring needs to be appropriate by evaluating the clinical condition requiring telemetry and the informed decision of the patients' undergoing that monitoring. A comfort care status should not preclude telemetry monitoring. Patients should be selected based upon individualized treatment plans and goals and after discussion with the patient.

In February 2013, the facility replaced the existing telemetry equipment with new equipment from a different manufacturer.

The facility had previously identified opportunities for improving its telemetry monitoring capabilities, including the need for more effective communication between MIT and unit staff, and initiated the following actions:

- Updated local policy¹ to define a process by which central MIT staff can escalate the telephone notification process in the event that unit staff cannot be reached when a life-threatening arrhythmia is detected.
- Provided a dedicated desk telephone on each unit as the telemetry notification telephone.
- Provided dedicated Ascom² telephones to each unit that utilizes central telemetry monitoring in the event MIT staff cannot reach unit staff using the dedicated desk telephone.
- Began taking necessary steps to decentralize telemetry MIT staff (that is, moving staff from the centralized monitoring location [called the cockpit at the facility] in one of the intensive care units to three inpatient units that utilize remote telemetry monitoring) in order to facilitate face-to-face communication between unit and telemetry monitoring staff.

All MIT staff were hired, trained, and deemed competent prior to decentralization of the cockpit to inpatient unit locations between August and October of 2014.

Allegations. The OIG received an anonymous complaint concerning patient telemetry monitoring practices. Specifically, the complainant alleged that:

- Untrained employees monitor inpatients on telemetry.
- Since January 2014, several inpatients on telemetry monitoring have died who potentially could have been saved if nursing staff were alerted rapidly to observe cardiac arrhythmias.
- The new telemetry monitoring equipment installed in February 2013 does not allow patient monitoring in a safe and effective way.

During onsite interviews, concerns were expressed that staff sleep while on duty during the night shift. This additional allegation is addressed in this report given its potential impact on effective communication and direct patient care.

Scope and Methodology

We conducted a site visit July 22–24, 2014. We interviewed facility leadership, Medical Care Line leadership, nurse managers of telemetry units, registered nurses (RNs) representing all tours of duty on units that utilize telemetry monitoring of patients, and telemetry MIT staff representing all tours of duty. We also performed an

¹ Medical Center Policy Memorandum No. 111-002, Telemetry Monitoring, June 18, 2014.

² A wireless telephone system used by the facility for quick communication between MIT and unit staff.

unannounced inspection of all nine units that utilize telemetry monitoring and the telemetry cockpit between 4:30 a.m. and 5:30 a.m. and between 10:00 a.m. and 10:30 a.m. on July 23, 2014.

We reviewed relevant facility policies and procedures; training records; electronic health records; incident reports; results and recommendations from a recent facility review of its telemetry services; mortality reviews conducted on the 40 facility-identified telemetry-monitored patients; and peer reviews of 10 of the 40 patients who died during the period January 1, 2014, through July 18, 2014.

We conducted the inspection in accordance with *Quality Standards for Inspection and Evaluation* published by the Council of the Inspectors General on Integrity and Efficiency.

Inspection Results

Issue 1: Telemetry Staff Training

We did not substantiate that untrained employees monitored patients on telemetry.

We reviewed the training and competency records of all 17 MIT staff working at the facility during the period January 1, 2014, through July 18, 2014. We found evidence of documented training and competency assessment for recently hired MIT staff as well as all existing MIT staff.

Additionally, processes and procedures were described by which new employees continue to receive training and mentoring by more experienced MIT staff. Leadership stated that until newly hired employees have sufficient training, knowledge, and observed competency to perform telemetry monitoring duties independently, they remain in orientation. None of the RN unit staff interviewed, who rely on MIT staff to notify them of changes in their patients' status, indicated that any of the MIT staff were incompetent or could not perform their duties effectively.

Issue 2: Telemetry Unit Deaths

We did not substantiate that during the period January 1, 2014, through July 18, 2014, several inpatients on telemetry died because of delays to alert nursing unit staff of observed and potentially fatal cardiac arrhythmias. However, we did find that the nursing unit staff did not consistently carry the wireless telephones as required, which could potentially result in notification delays.

We reviewed the facility-completed clinical review worksheets for mortality reviews on the 40 facility-identified telemetry-monitored patients who died during the period January 1, 2014, through July 18, 2014. For one patient, we identified a delay in notification from telemetry monitoring to unit staff. We did not find that the notification delay contributed to the patient's death.

Furthermore, of the 40 reviews, we found documentation of 18 (45 percent) patients who were under "hospice care" or "comfort care" status. For those patients, there was a lack of documentation on why telemetry monitoring was required and whether action would be taken to correct a newly identified arrhythmia. It is possible that clinical staff were aware not to act on arrhythmias while telemetry staff were not. The lack of corrective action noticed by telemetry staff for some patients with arrhythmias may have been interpreted as a delay in care, when in fact, the patients' wishes were not to have any interventions.

None of the RN staff interviewed were aware of deaths resulting from MIT staff failing to notify unit staff of observed arrhythmias in a timely manner.

Although the facility has implemented a plan to improve communication between MIT and unit staff, we found that unit staff were not in full compliance with the plan.

We inspected all nine units that utilized centralized telemetry monitoring between 4:30 a.m. and 5:30 a.m. on July 23, 2014. We asked the charge nurse or designee to show us the wireless telephone they are required to carry in order to be immediately available if MIT staff could not reach anyone using the designated telemetry desk telephone. During the unit inspections, we found that five of the nine unit wireless telephones were not carried by the charge nurse or designee. As a follow-up to these observations, we revisited the same nine units between 10:00 a.m. and 10:30 a.m. that same day and found that two of the earlier non-compliant units' charge nurses or designees were not carrying the wireless telephones as required.

Issue 3: Unsafe and Ineffective Telemetry Equipment

We did not substantiate that the new telemetry monitoring equipment installed in February 2013 does not allow patient monitoring in a safe and effective way.

We interviewed MIT staff from all tours of duty and observed the operation and demonstration of the new telemetry equipment. We found that recently hired staff had no criticism of the new equipment. MIT staff who had used the previous telemetry monitoring equipment were critical of the new equipment's ease of use compared to that of the previous equipment.

Staff stated that they noticed a 3 to 4-minute delay between the real-time observation of patient heart rhythms on the monitors and the ability to retrieve, review, and/or analyze the observed rhythms using the associated workstations that archive the patient readings. MIT staff expressed concern about this delay because they routinely monitor multiple patients. Patients could experience a potential arrhythmia within seconds of each other. An MIT may hear alarms for multiple patients but may not be able to observe each arrhythmia in real time; therefore, they used the archived data in the telemetry workstation to review potential arrhythmias no longer viewable on the real-time monitor. MIT staff felt that this delay in retrieving archived data could adversely affect patient care.

Clinical leadership investigated the validity of the complaint while we were onsite. They determined that although a workstation delay was observed, the length of the delay between real-time display of rhythms and retrieval from the archiving workstation was approximately 1 minute rather than the 3–4 minutes as described. Although, the clinical leadership was committed to addressing the delay with the manufacturer, the expectation from leadership to MIT staff was to alert clinical staff immediately of any observed real-time and potentially fatal cardiac arrhythmias without further review and/or analysis.

Issue 4: Unit Staff Sleep at Night While on Duty

We could not substantiate that unit staff slept at night while on duty during our site visit.

During our interviews, we received allegations that nursing and MIT staff sleep during the night shift. Therefore, we made unannounced inspection on all nine units that

utilized telemetry monitoring and the telemetry cockpit between 4:30 a.m. and 5:30 a.m. on July 23, 2014. We observed no staff members sleeping during our unannounced visits. Furthermore, the facility reported that only one complaint had been received from fiscal year 2013 to July 2014 regarding staff sleeping at night, and it could not be substantiated. Additionally, the facility stated there have been no reports of staff sleeping from night shift nursing leadership who make rounds throughout the facility.

Conclusions

We did not substantiate that untrained staff monitored telemetry patients, that patients died due to lack of communication between the telemetry cockpit and the unit staff, or that the new equipment is unsafe or ineffective.

However, we found that staff were not carrying the required wireless telephones to ensure MIT staff could reach unit staff when needed as required by facility policy. We also found that 45 percent of facility-identified patients on telemetry during the period January 1, 2014, through July 18, 2014, were in a status of hospice/comfort care only at the time of their death. This may have caused confusion for MIT staff who have been trained to notify unit staff immediately of arrhythmias but are not aware of the patient's specific end of life wishes.

In summary, we found that the facility has implemented a plan to improve communication between MIT and unit staff. However, nursing staff were not consistently adhering to the facility's policy. We found the new telemetry monitoring system was operating properly and fully capable of safely and accurately monitoring patients on telemetry. We found a significant number of hospice or comfort care only patients monitored on telemetry without documentation of the need for such monitoring.

Recommendations

1. We recommended that the Facility Director ensure that the appropriateness of assigning patients to telemetry is reviewed.
2. We recommended that the Facility Director ensure dedicated wireless telephones are continuously carried by unit charge nurses or designees for effective communication between unit and telemetry monitoring technicians as required by local policy.

Interim VISN Director Comments

**Department of
Veterans Affairs**

Memorandum

Date: February 24, 2015

From: Director, South Central VA Health Care Network (10N16)

**Subject: Healthcare Inspection – Patient Telemetry Monitoring Concerns,
Michael E. DeBakey VA Medical Center, Houston, Texas**

To: Director, Dallas Regional Office of Healthcare Inspections (54DA)
Director, Management Review Service (VHA 10AR MRS OIG Hotline)

1. The South Central VA Healthcare Network (VISN 16) has reviewed and concur with the findings, recommendations and corrective actions included in the draft report submitted by the Michael E. DeBakey VA Medical Center, Houston, TX.
2. If you have questions regarding the information submitted, please contact Reba T. Moore, VISN 16 Accreditation Specialist at 601-206-7022.

Susan Easter 2/24/15

Susan Easter, MS, BSN, ANE-BC, NE-BC, CPHQ, VHA-CM
for and in the absence of
Gregg Parker, M.D., MHA
Interim Network Director
South Central VA Health Care Network (10N16)

Facility Director Comments

**Department of
Veterans Affairs**

Memorandum

Date: February 13, 2015

From: Director, Michael E. DeBakey VA Medical Center (580/00)

**Subject: Healthcare Inspection – Patient Telemetry Monitoring Concerns,
Michael E. DeBakey VA Medical Center, Houston, Texas**

To: Director, South Central VA Health Care Network (10N16)

I have reviewed the report and concur with the recommendations. Action plans have been implemented to comply with the recommendations.



**Adam C. Walmus, MHA, FACHE
Director, Michael E. DeBakey VA Medical Center**

Comments to OIG's Report

The following Director's comments are submitted in response to the recommendations in the OIG report:

OIG Recommendations

Recommendation 1. We recommended that the Facility Director ensure that the appropriateness of assigning patients to telemetry is reviewed.

Concur

Target date for completion: March 13, 2015

Facility response: The telemetry policy was revised to more clearly define patient conditions requiring the use of telemetry and to identify physician responsibility for reviewing the necessity for continuation of telemetry on a daily basis. The policy will again be reviewed with physicians and residents, focusing on the appropriateness of telemetry and prompt discontinuation when telemetry is no longer indicated. Monthly monitoring of the appropriateness of telemetry will be conducted and reported to facility leadership.

Recommendation 2. We recommended that the Facility Director ensure dedicated wireless telephones are continuously carried by unit charge nurses or designees for effective communication between unit and telemetry monitoring technicians as required by local policy.

Concur

Target date for completion: March 13, 2015

Facility response: The telemetry policy will be re-reviewed with unit nurses with emphasis on the importance of adherence to facility policy with regard to ensuring that the charge nurse or designee carries the wireless telephone at all times to ensure effective communication between the unit staff and telemetry monitoring technicians. Monthly random monitoring with reporting to leadership will be conducted to ensure ongoing compliance.

Office of Inspector General

Contact and Staff Acknowledgments

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